# Orchards at Farnsworth 

 Farms
## Traffic Impact Study



## Sandy, Utah

June 4, 2020
UT20-1646


## EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed Orchards at Farnsworth Farms development located in Sandy, Utah. The project is located on the west side of 700 East between 11000 South and 11400 South.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at key intersections and roadways near the site. The evening peak hour level of service (LOS) was computed for each study intersection. The results of this analysis are shown in Table ES-1. Recommended changes to storage lengths are shown in Table ES-2.

| TABLE ES-1 <br> LOS Analysis - Evening Peak Hour <br> Sandy - Orchards at Farnsworth Farms TIS |  |  |  |
| :---: | :---: | :---: | :---: |
| Intersection | Level of Service ( $\mathrm{Sec} / \mathrm{Neh}$ ) |  |  |
|  | Existing (2020) |  |  |
|  | Background | Background Mitigated | Plus Project |
| 11000 South / 700 East | C (22.0) | C (21.6) | C (21.4) |
| Dusty Creek Avenue / 700 East | d (31.7) / WBL | d (31.8) / WBL | d (29.7) / WBL |
| 700 East / 11400 South | E (59.3) | D (48.5) | D (50.1) |
| North Access / 700 East | - |  | a (4.6) / EBR |
| South Access / 700 East | - | - | a (5.2) / EBR |
| 1. Intersection LOS and delay (secondsívehicle) values represent the overall intersection average for roundabout, signalized, al-way stop-controlled intersections and the worst approach for all other unsignalized intersections. Uppercase LOS used for signalized, roundabout, and all-way stop-controlled intersections. Lowercase LOS used for one-way \& two-way stop-controlled intersections. <br> Source: Hales Engineering, June 2020 |  |  |  |
|  |  |  |  |



## SUMMARY OF KEY FINDINGS/RECOMMENDATIONS

The following is a summary of key findings and recommendations:

- The project accesses 700 East (SR-71), which is maintained by UDOT as an access category 5 roadway.
- Traffic Volume Adjustments:
- Traffic volumes were collected on Wednesday, March 18, 2020 during the COVID-19 pandemic when traffic volumes were lower than normal.
- Therefore, previous counts collected at the 11000 South / 700 East intersection from September 2019 were referenced to make adjustments. The September 2019 volumes were increased by $3 \%$ to estimate an average 2020 weekday.
- The adjusted September 2019 traffic volumes were approximately $110 \%$ higher than those collected on March 18. Therefore, the collected data were increased by $110 \%$ to represent normal conditions. The adjusted September 2019 volumes at 11000 South / 700 East were used directly in the analysis.
- In addition, the trips generated by the proposed Thackeray Townhome project on 700 East were added to the background traffic.
- The 700 East / 11400 South intersection is currently operating at LOS E during the evening peak hour in existing (2020) background conditions. Queueing is anticipated at both the 11000 South and 11400 South intersections on 700 East.
- Recommendation: That permissive-protected phasing be implemented on the southbound left-turn movement of the 11000 South / 700 East intersection to mitigate queueing. This left-turn phasing is currently warranted at this location based on UDOT left-turn phasing guidelines.
- Recommendation: That signal timing be adjusted at the 700 East / 11400 South intersection to better accommodate the demand, including shifting more green time to the eastbound movements during the evening peak hour.
- Recommendation: That the storage lengths of the east- and westbound leftturn lanes at the 700 East / 11400 South intersection be extended to accommodate queueing. See Table ES-2 for recommended storage lengths.
- The development will consist of 116 residential townhomes.
- Both project accesses were assumed to be right-in, right-out (RIRO) accesses. The South Access was assumed to be RIRO due to the offset with Dusty Creek Avenue. This resulted in some U-turns at 11000 South and 11400 South.
- All study intersections are anticipated to operate at an acceptable LOS during the evening peak hour in existing (2020) plus project conditions.


## Sandy Orchards at Farnsworth Farms

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....
SUMMARY OF KEY FINDINGS/RECOMMENDATIONS ..... ii
TABLE OF CONTENTS ..... iii
LIST OF TABLES ..... iv
LIST OF FIGURES ..... iv
I. INTRODUCTION ..... 1
A. Purpose ..... 1
B. Scope ..... 2
C. Analysis Methodology ..... 2
D. Level of Service Standards ..... 2
II. EXISTING (2020) BACKGROUND CONDITIONS ..... 5
A. Purpose ..... 5
B. Roadway System ..... 5
C. Traffic Volumes ..... 5
D. Level of Service Analysis ..... 6
E. Queuing Analysis ..... 6
F. Mitigation Measures ..... 8
G. Mitigated Scenario ..... 8
III. PROJECT CONDITIONS ..... 9
A. Purpose ..... 9
B. Project Description ..... 9
C. Trip Generation ..... 9
D. Trip Distribution and Assignment ..... 9
E. Access ..... 10
F. Auxiliary Lane Requirements ..... 12
IV. EXISTING (2020) PLUS PROJECT CONDITIONS ..... 13
A. Purpose ..... 13
B. Traffic Volumes ..... 13
C. Level of Service Analysis ..... 13
D. Queuing Analysis ..... 13
E. Mitigation Measures ..... 13
F. Recommended Storage Lengths ..... 15
Appendix A: Turning Movement CountsAppendix B: LOS ResultsAppendix C: Project Site PlanAppendix D: Queuing Results

## LIST OF TABLES

Table 1: Level of Service Description .....  3
Table 2: Existing (2020) Background Evening Peak Hour LOS ..... 6
Table 3: Mitigated Existing (2020) Background Evening Peak Hour LOS ..... 8
Table 4: Trip Generation ..... 10
Table 5: Existing (2020) Plus Project Evening Peak Hour LOS ..... 13
Table 6: Recommended Storage Lengths ..... 15
LIST OF FIGURES
Figure 1: Vicinity map showing the project location in Sandy, Utah ..... 1
Figure 2: Visual representation of the LOS letter designations ..... 4
Figure 3: Existing (2020) background evening peak hour traffic volumes ..... 7
Figure 4: Trip assignment for the evening peak hour ..... 11
Figure 5: Existing (2020) plus project evening peak hour traffic volumes. ..... 14

## I. INTRODUCTION

## A. Purpose

This study addresses the traffic impacts associated with the proposed Orchards at Farnsworth Farms development located in Sandy, Utah. The proposed project is located on the west side of 700 East in between 11000 South and 11400 South. Figure 1 shows a vicinity map of the proposed development.

Included within the analyses for this study are the traffic operations and recommended mitigation measures for existing conditions and plus project conditions (conditions after development of the proposed project) at key intersections and roadways near the site.


Figure 1: Vicinity map showing the project location in Sandy, Utah

## B. Scope

The study area was defined based on conversations with the development team. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersections:

- 700 East / 11000 South
- 700 East / 11400 South
- Dusty Creek Avenue / 700 East
- Project Accesses (2) / 700 East


## C. Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and $F$ the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections. Figure 2 provides a visual representation of each LOS letter designation.

The Highway Capacity Manual (HCM), $6^{\text {th }}$ Edition, 2016 methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized and all-way stop intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For all other unsignalized intersections, LOS is reported based on the worst movement.

Using Synchro/SimTraffic software, which follow the HCM methodology, the peak hour LOS was computed for each study intersection. Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. The detailed LOS reports are provided in Appendix B. Hales Engineering also calculated the $95^{\text {th }}$ percentile queue lengths for the study intersections using SimTraffic. The detailed queue length reports are provided in Appendix D.

## D. Level of Service Standards

For the purposes of this study, a minimum acceptable intersection performance for each of the study intersections was set at LOS D. If levels of service E or F conditions exist, an explanation and/or mitigation measures will be presented. A LOS D threshold is consistent with "state-of-thepractice" traffic engineering principles for urbanized areas.

Table 1: Level of Service Description

| Level of <br> Service | Description of Traffic Conditions | Average Delay <br> (seconds/vehicle) |
| :---: | :--- | :---: |
| Signalized Intersections | Overall Intersection |  |



Figure 2: Visual representation of the LOS letter designations

## II. EXISTING (2020) BACKGROUND CONDITIONS

## A. Purpose

The purpose of the background analysis is to study the intersections and roadways during the peak travel periods of the day with background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified, and potential mitigation measures recommended. This analysis provides a baseline condition that may be compared to the build conditions to identify the impacts of the development.

## B. Roadway System

The primary roadways that will provide access to the project site are described below:
700 East (SR-71) - is a state-maintained roadway (classified by UDOT access management standards as a "Regional - Priority Urban Importance" facility, or access category 5 roadway). 700 East has two travel lanes in each direction separated by a center two-way left-turn lane (TWLTL). As identified and controlled by UDOT, a "Regional - Urban Importance" access classification identifies minimum signalized intersection spacing of one-half mile ( 2,640 feet), minimum unsignalized street spacing of 660 feet, and minimum driveway spacing of 350 feet. The posted speed limit on 700 East is 40 mph .

11000 South - is a city-maintained roadway which is classified by the Sandy Transportation Master Plan (November 2009) as a "major collector." The roadway has one travel lane in each direction separated by a center TWLTL. The posted speed limit is 35 mph in the study area.

11400 South - is a city-maintained roadway which is classified by the Sandy Transportation Master Plan (November 2009) as a "major arterial." The roadway has two travel lanes in each direction separated by a center TWLTL. The posted speed limit is 40 mph in the study area.

## C. Traffic Volumes

Weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts were performed at the following intersections:

- 700 East / 11000 South
- 700 East / 11400 South
- Dusty Creek Avenue / 700 East

The counts were performed on Wednesday, March 18, 2020. The morning peak hour was determined to be between 8:00 and 9:00 a.m., and the evening peak hour was determined to be between 5:00 and 6:00 p.m. The evening peak hour volumes were up to $20 \%$ higher than the morning peak hour volumes. Therefore, the evening peak hour volumes were used in the analysis to represent the worst-case conditions. Detailed count data are included in Appendix A.

The traffic counts were collected during the COVID-19 pandemic when traffic volumes were slightly reduced due to social distancing measures. Hales Engineering referred to older counts taken at the 11000 South / 700 East intersection on Thursday, September 12, 2019. These volumes were increased by 3\% to estimate an average 2020 weekday. The adjusted 2020 traffic volumes were approximately $110 \%$ higher than those collected on March 18. Therefore, the collected data were increased by $110 \%$ to represent normal conditions. The older adjusted counts at 11000 South / 700 East were used directly in the analysis.

In addition, Hales Engineering inserted the anticipated trips being generated by the proposed Thackeray Townhome project north of 11000 South on 700 East. Based on the TIS completed for that project in October 2019, it is anticipated that the project will generate approximately 28 evening peak hour trips. It was assumed that $35 \%$ of these trips will pass through the 11000 South / 700 East intersection to assign these to the network.

Figure 3 shows the existing evening peak hour volumes as well as intersection geometry at the study intersections.

## D. Level of Service Analysis

Hales Engineering determined the 700 East / 11400 South intersection is currently operating at LOS E during the evening peak hour, as shown in Table 2. These results serve as a baseline condition for the impact analysis of the proposed development during existing (2020) conditions.

Table 2: Existing (2020) Background Evening Peak Hour LOS


## E. Queuing Analysis

Hales Engineering calculated the $95^{\text {th }}$ percentile queue lengths for each of the study intersections. A $95^{\text {th }}$ percentile queue length of over 1,000 feet is anticipated on the eastbound approach of the 700 East / 11400 South intersection. A $95^{\text {th }}$ percentile queue length of approximately 320 feet is anticipated on the southbound approach of the 11000 South / 700 East intersection.

Sandy Orchards at Farnsworth Farms TIS Existing (2020) Background


Hales Engineering

## F. Mitigation Measures

It is recommended that permissive-protected phasing be implemented on the southbound leftturn movement of the 11000 South / 700 East intersection to mitigate queueing. This phasing is currently warranted at this location based on UDOT left-turn phasing guidelines.

It is recommended that signal timing be adjusted at the 700 East / 11400 South intersection to better accommodate the demand. This may include shifting more green time to the eastbound movements during the evening peak hour.

It is also recommended that the storage lengths of the east- and westbound left-turn lanes at the 700 East / 11400 South intersection be extended to accommodate queueing. See Section IV.F for recommended storage lengths.

## G. Mitigated Scenario

Hales Engineering completed an additional existing (2020) background scenario with the proposed mitigation measures implemented. As shown in Table 3, it is anticipated that all study intersections will operate at acceptable levels of service with the proposed mitigation measures. It is anticipated that these improvements will also significantly reduce the identified queue lengths.

Table 3: Mitigated Existing (2020) Background Evening Peak Hour LOS

| Intersection |  | Level of Service |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Description | Control | Movement ${ }^{1}$ | Aver. Delay (Sec/Veh) | LOS ${ }^{2}$ |
| 11000 South / 700 East | Signal | - | 21.6 | C |
| Dusty Creek Avenue / 700 East | WB Stop | WBL | 31.8 | d |
| 700 East / 11400 South | Signal | - | 48.5 | D |
| nent indicated for unsignalized intersections where case LOS used for signalized, roundabout, and AW <br> e: Hales Engineering, June 2020 |  | vement. SBL = Sou <br> sed for non-AWSC i | und left movement, sections. |  |

## III. PROJECT CONDITIONS

## A. Purpose

The project conditions discussion explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in Chapter I.

## B. Project Description

The proposed Orchards at Farnsworth Farms development is located on the west side of 700 East in between 11000 South and 11400 South. The development will consist of townhomes. A concept plan for the proposed development is provided in Appendix C .

The proposed land use for the development has been identified as follows:

- Townhomes

116 Units

## C. Trip Generation

Trip generation for the development was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), Trip Generation, 10 ${ }^{\text {th }}$ Edition, 2017. Trip generation for the proposed project is included in Table 4.

The total trip generation for the development is as follows:

- Daily Trips: 838
- Morning Peak Hour Trips: 56
- Evening Peak Hour Trips: 68


## D. Trip Distribution and Assignment

Project traffic is assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages, especially near the site. The resulting distribution of project generated trips during the evening peak hour is as follows:

## To/From Project:

- $20 \%$ North
- $25 \%$ South
- $45 \%$ West
- 10\% East

Table 4: Trip Generation

| Sandy - Orchards at Farnsworth Farms TIS Trip Generation |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Weekday Daily <br> Land Use ${ }^{\text { }}$ | $\begin{aligned} & \text { \# of } \\ & \text { Units } \end{aligned}$ | $\begin{aligned} & \text { Unit } \\ & \text { Type } \end{aligned}$ | Trip Generation | $\begin{gathered} \text { \% } \\ \text { Entering } \end{gathered}$ | $\begin{gathered} \% \\ \text { Exiting } \\ \hline \end{gathered}$ | Trips <br> Entering | Trips <br> Exiting | Total Daily Trips |
| Multifamily Housing (Low-Rise) (220) | 116 | Dwelling Units | 838 | 50\% | 50\% | 419 | 419 | 838 |
| Morning Peak Hour <br> Land Use ${ }^{1}$ | $\begin{aligned} & \text { \# of } \\ & \text { Units } \end{aligned}$ | $\begin{aligned} & \text { Unit } \\ & \text { Type } \end{aligned}$ | Trip Generation | $\begin{gathered} \text { \% } \\ \text { Entering } \\ \hline \end{gathered}$ | $\begin{gathered} \% \\ \text { Exiting } \\ \hline \end{gathered}$ | Trips Entering | Trips Exiting | $\begin{gathered} \text { Total a.m. } \\ \text { Trips } \\ \hline \end{gathered}$ |
| Multifamily Housing (Low-Rise) (220) | 116 | Dwelling Units | 56 | 23\% | 77\% | 13 | 43 | 56 |
| Evening Peak Hour <br> Land Use | $\begin{aligned} & \text { \# of } \\ & \text { Units } \end{aligned}$ | $\begin{aligned} & \text { Unit } \\ & \text { Type } \end{aligned}$ | Trip <br> Generation | $\begin{gathered} \text { \% } \\ \text { Entering } \\ \hline \end{gathered}$ | $\begin{gathered} \% \\ \text { Exiting } \\ \hline \end{gathered}$ | Trips Entering | $\begin{aligned} & \text { Trips } \\ & \text { Exiting } \\ & \hline \end{aligned}$ | Total p.m. <br> Trips |
| Multifamily Housing (Low-Rise) (220) | 116 | Dwelling Units | 68 | 63\% | 37\% | 43 | 25 | 68 |

[^0]These trip distribution assumptions were used to assign the evening peak hour generated traffic at the study intersections to create trip assignment for the proposed development. Trip assignment for the development is shown in Figure 4.

## E. Access

The proposed access for the site will be gained at the following locations (see also concept plan in Appendix C):

## 700 East:

- The North Access will be located approximately 800 feet south of 11000 South. It will access the project on the west side of 700 East. This will be a right-in, right-out (RIRO) access based on conversations with UDOT.
- The South Access will be located approximately 1,100 feet north of 11400 South and 200 feet north of Dusty Creek Avenue. It will access the project on the west side of 700 East. It is recommended that this access also be RIRO due to the close offset with Dusty Creek Avenue to avoid left-turn conflicts. This resulted in assigning project trips to make U-turns at 11000 South and 11400 South in order to travel to/from the project.

Sandy Orchards at Farnsworth Farms TIS Trip Assignment

Evening Peak Hour
Figure 4


## Hales Engineering

## F. Auxiliary Lane Requirements

Based on Administrative Rule R930-6, the following auxiliary lanes may be required for the proposed accesses onto 700 East (UDOT Access Category 5 roadway):

Right-turn Deceleration Lane:

- Required when the projected peak hour right-turn ingress volume is greater than 25 vph. As shown in Figure 4, it is not anticipated that this peak hour volume will be met during the evening peak hour at the accesses onto 700 East. Therefore, right-turn deceleration lanes are not recommended at either access.

Right-turn Acceleration Lane:

- Required when the projected peak hour right-turn egress volume is greater than 50 vph when the posted speed limit on the highway is greater than 40 mph . As shown in Figure 4, it is not anticipated that this peak hour volume will be met during the evening peak hour at the accesses onto 700 East. Therefore, a right-turn acceleration lane is not recommended at this location.


## IV. EXISTING (2020) PLUS PROJECT CONDITIONS

## A. Purpose

The purpose of the existing (2020) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for existing background traffic and geometric conditions plus the net trips generated by the proposed development. This scenario provides valuable insight into the potential impacts of the proposed project on background traffic conditions.

## B. Traffic Volumes

Hales Engineering added the project trips to the existing (2020) background traffic volumes to predict turning movement volumes for existing (2020) plus project conditions. Existing (2020) plus project evening peak hour turning movement volumes are shown in Figure 5.

## C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the evening peak hour with project traffic added, as shown in Table 5.

Table 5: Existing (2020) Plus Project Evening Peak Hour LOS

| Intersection |  | Level of Service |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Description | Control | Movement ${ }^{1}$ | Aver. Delay (Sec/Veh) | LOS ${ }^{2}$ |
| 11000 South / 700 East | Signal | - | 21.4 | C |
| Dusty Creek Avenue / 700 East | WB Stop | WBL | 29.7 | d |
| 700 East / 11400 South | Signal | - | 50.1 | D |
| North Access / 700 East | EB Stop | EBR | 4.6 | a |
| South Access / 700 East | EB Stop | EBR | 5.2 | a |
| ment indicated for unsignalized intersections where case LOS used for signalized, roundabout, and AW <br> e: Hales Engineering, June 2020 |  | vement. SBL = Sout sed for non-AWSC in | und left movemen sections. |  |

## D. Queuing Analysis

Hales Engineering calculated the $95^{\text {th }}$ percentile queue lengths for each of the study intersections. No significant queuing is anticipated during the evening peak hour.

## E. Mitigation Measures

No additional mitigation measures are recommended at this time.

Sandy Orchards at Farnsworth Farms TIS


## F. Recommended Storage Lengths

Hales Engineering determined recommended storage lengths based on the $95^{\text {th }}$ percentile queue lengths given in the existing (2020) plus project scenario. These storage lengths do not include the taper length. Recommended storage lengths for the study intersections are shown in Table 6. Intersections shown in Table 6 include new intersections and existing intersections that have recommended storage length changes.

Table 6: Recommended Storage Lengths

| Recommended Storage Lengths <br> Sandy - Orchards at Farnsworth Farms TIS |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Intersection | Storage Length (feet) |  |  |  |  |  |  |  |
|  | Northbound |  | Southbound |  | Eastbound |  | Westbound |  |
|  | LT | RT | LT | RT | LT | RT | LT | RT |
| 700 East / 11400 South | - | - | - | - | 400 | - | 250 | - |
| ce: Hales Engineering, Jun |  |  |  |  |  |  |  |  |

# APPENDIX A Turning Movement Counts 





# APPENDIX B <br> LOS Results 

| Project: <br> Analysis Period: <br> Time Period: |  | SimTraffic LOS Report |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | andy O xisting (2 vening $P$ | ds at ackgr ur | orth | TIS | 20-16 |
| Intersection: Type: |  | $700 \mathrm{E} \& 11000 \mathrm{~S}$ Signalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | LOS |
| NB | L | 70 | 69 | 99 | 26.3 | C |
|  | T | 1,020 | 1,004 | 98 | 14.0 | B |
|  | R | 55 | 57 | 104 | 7.0 | A |
|  | Subtotal | 1,145 | 1,130 | 99 | 14.4 | B |
| SB | L | 171 | 173 | 101 | 65.6 | E |
|  | T | 723 | 707 | 98 | 13.0 | B |
|  | R | 81 | 80 | 98 | 4.3 | A |
|  | Subtotal | 975 | 960 | 98 | 21.8 | C |
| EB | L | 76 | 74 | 97 | 49.2 | D |
|  | T | 210 | 212 | 101 | 37.7 | D |
|  | R | 50 | 49 | 98 | 6.7 | A |
|  | Subtotal | 336 | 335 | 100 | 35.7 | D |
| WB | L | 75 | 76 | 101 | 49.2 | D |
|  | T | 180 | 184 | 102 | 38.9 | D |
|  | R | 111 | 111 | 100 | 12.8 | B |
|  | Subtotal | 366 | 371 | 101 | 33.2 | C |
| Total |  | 2,823 | 2,796 | 99 | 22.0 | C |

Intersection: $\quad 700$ E \& Dusty Creek Ave
Type:
Unsignalized


| Project: <br> Analysis Period: Time Period: |  | SimTraffic LOS Report |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sandy Orchards at Farnsworth Farms TIS Existing (2020) Background |  |  |  |  |
| Intersection: Type: |  | $700 \mathrm{E} \& 11400 \mathrm{~S}$ Signalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | LOS |
| NB | L | 255 | 262 | 103 | 80.9 | F |
|  | T | 630 | 628 | 100 | 46.1 | D |
|  | R | 230 | 229 | 100 | 24.0 | C |
|  | Subtotal | 1,115 | 1,119 | 100 | 49.7 | D |
| SB | L | 186 | 190 | 102 | 86.6 | F |
|  | T | 550 | 542 | 99 | 48.5 | D |
|  | R | 157 | 150 | 96 | 16.0 | B |
|  | Subtotal | 893 | 882 | 99 | 51.2 | D |
| EB | L | 269 | 262 | 97 | 223.8 | F |
|  | T | 1,060 | 1,045 | 99 | 56.7 | $E$ |
|  | R | 140 | 141 | 101 | 15.6 | B |
|  | Subtotal | 1,469 | 1,448 | 99 | 82.9 | F |
| WB | L | 190 | 192 | 101 | 76.2 | E |
|  | T | 845 | 835 | 99 | 42.5 | D |
|  | R | 216 | 215 | 99 | 17.0 | B |
|  | Subtotal | 1,251 | 1,242 | 99 | 43.3 | D |
| Total |  | 4,728 | 4,691 | 99 | 59.3 | E |

1: 700 E \& 11000 S Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| SBR |  |  |  |  |  |  |  |  |  |  |  |
| Denied Delay (hr) | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Denied Del/Veh (s) | 3.0 | 0.5 | 3.0 | 3.0 | 0.5 | 2.9 | 0.1 | 0.0 | 0.1 | 2.3 | 0.3 |
| Total Delay $(\mathrm{hr})$ | 1.0 | 2.2 | 0.1 | 1.1 | 2.0 | 0.4 | 0.5 | 4.0 | 0.1 | 3.2 | 2.6 |
| Total Del/Veh (s) | 49.2 | 37.7 | 6.7 | 49.2 | 38.9 | 12.8 | 26.3 | 14.0 | 7.0 | 65.6 | 13.0 |
| Vehicles Entered | 74 | 211 | 49 | 76 | 183 | 111 | 70 | 1007 | 58 | 172 | 712 |
| Vehicles Exited | 74 | 212 | 49 | 76 | 184 | 111 | 69 | 1004 | 57 | 173 | 707 |
| Hourly Exit Rate | 74 | 212 | 49 | 76 | 184 | 111 | 69 | 1004 | 57 | 173 | 707 |
| Input Volume | 76 | 210 | 50 | 75 | 180 | 111 | 70 | 1020 | 55 | 171 | 723 |
| \% of Volume | 97 | 101 | 98 | 101 | 102 | 100 | 99 | 98 | 104 | 101 | 98 |

## 1: 700 E \& 11000 S Performance by movement

| Movement | All |
| :--- | ---: |
| Denied Delay (hr) | 0.5 |
| Denied Del/Veh (s) | 0.7 |
| Total Delay (hr) | 17.3 |
| Total Del/Veh (s) | 22.0 |
| Vehicles Entered | 2803 |
| Vehicles Exited | 2796 |
| Hourly Exit Rate | 2796 |
| Input Volume | 2823 |
| \% of Volume | 99 |

## 2: 700 E \& Dusty Creek Ave Performance by movement

| Movement | WBL | WBR | NBT | NBR | SBL | SBT | All |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Denied Delay (hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 0.2 | 4.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 |
| Total Delay (hr) | 0.3 | 0.1 | 1.3 | 0.1 | 0.1 | 0.7 | 2.6 |
| Total Del/Veh (s) | 31.7 | 9.6 | 4.5 | 4.4 | 13.6 | 2.9 | 4.5 |
| Vehicles Entered | 29 | 29 | 1080 | 47 | 34 | 822 | 2041 |
| Vehicles Exited | 30 | 29 | 1081 | 47 | 34 | 824 | 2045 |
| Hourly Exit Rate | 30 | 29 | 1081 | 47 | 34 | 824 | 2045 |
| Input Volume | 30 | 30 | 1090 | 50 | 35 | 838 | 2073 |
| \% of Volume | 100 | 97 | 99 | 94 | 97 | 98 | 99 |

3: 700 E \& 11400 S Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| SBR |  |  |  |  |  |  |  |  |  |  |  |
| Denied Delay (hr) | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 2.5 | 0.5 | 2.4 | 2.3 | 0.4 | 2.2 | 2.2 | 0.4 | 2.1 | 0.2 | 0.0 |
| Total Delay (hr) | 17.8 | 16.8 | 0.6 | 4.2 | 10.1 | 1.0 | 6.0 | 8.3 | 1.5 | 4.6 | 7.4 |
| Total Del/Veh (s) | 223.8 | 56.7 | 15.6 | 76.2 | 42.5 | 17.0 | 80.9 | 46.1 | 24.0 | 86.6 | 48.5 |
| Vehicles Entered | 274 | 1046 | 141 | 194 | 838 | 215 | 263 | 629 | 228 | 191 | 538 |
| Vehicles Exited | 262 | 1045 | 141 | 192 | 835 | 215 | 262 | 628 | 229 | 190 | 542 |
| Hourly Exit Rate | 262 | 1045 | 141 | 192 | 835 | 215 | 262 | 628 | 229 | 190 | 542 |
| Input Volume | 269 | 1060 | 140 | 190 | 845 | 216 | 255 | 630 | 230 | 180 | 550 |
| \% of Volume | 97 | 99 | 101 | 101 | 99 | 99 | 103 | 100 | 100 | 102 | 99 |

## 3: 700 E \& 11400 S Performance by movement

| Movement | All |
| :--- | ---: |
| Denied Delay (hr) | 1.1 |
| Denied Del/Veh (s) | 0.9 |
| Total Delay (hr) | 79.0 |
| Total Del/Veh (s) | 59.3 |
| Vehicles Entered | 4707 |
| Vehicles Exited | 4691 |
| Hourly Exit Rate | 4691 |
| Input Volume | 4728 |
| \% of Volume | 99 |

Total Network Performance

|  |  |
| :--- | ---: |
| Denied Delay (hr) | 1.7 |
| Denied Del/Veh (s) | 1.1 |
| Total Delay (hr) | 104.8 |
| Total Del/Veh (s) | 64.6 |
| Vehicles Entered | 5650 |
| Vehicles Exited | 5631 |
| Hourly Exit Rate | 5631 |
| Input Volume | 15297 |
| \% of Volume | 37 |

Intersection: 1: 700 E \& 11000 S

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
| Directions Served | L | T | R | L | T | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 161 | 239 | 116 | 173 | 274 | 166 | 188 | 360 | 354 | 159 | 224 | 360 |
| Average Queue (ft) | 55 | 126 | 20 | 60 | 118 | 47 | 42 | 127 | 141 | 14 | 114 | 134 |
| 95th Queue (ft) | 112 | 208 | 70 | 125 | 216 | 121 | 111 | 281 | 293 | 71 | 214 | 337 |
| Link Distance (ft) |  | 1546 |  |  | 1422 |  |  | 1600 | 1600 |  | 1702 |  |
| Upstream BIk Time (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 100 |  | 125 | 125 |  | 100 | 100 |  |  | 225 | 100 |  |
| Storage Blk Time (\%) | 2 | 17 |  | 0 | 14 | 0 | 0 | 9 | 3 |  | 25 | 7 |
| Queuing Penalty (veh) | 6 | 22 |  | 1 | 26 | 1 | 2 | 6 | 1 | 92 | 12 |  |

Intersection: 1: 700 E \& 11000 S

| Movement | SB | SB |
| :--- | ---: | ---: |
| Directions Served | T | $R$ |
| Maximum Queue (ft) | 333 | 53 |
| Average Queue (ft) | 107 | 13 |
| 95th Queue (ft) | 302 | 37 |
| Link Distance (ft) | 1702 |  |
| Upstream Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  | 225 |
| Storage Bay Dist (ft) | 0 |  |
| Storage Blk Time (\%) | 0 |  |
| Queuing Penalty (veh) | 0 |  |

Intersection: 2: 700 E \& Dusty Creek Ave

| Movement | WB | WB | NB | NB | SB | SB |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Directions Served | L | R | T | TR | L | T |
| Maximum Queue (ft) | 72 | 68 | 6 | 13 | 60 | 20 |
| Average Queue (ft) | 26 | 22 | 0 | 1 | 18 | 1 |
| 95th Queue (ft) | 60 | 53 | 6 | 7 | 49 | 20 |
| Link Distance (ft) | 691 |  | 887 | 887 |  | 1600 |
| Upstream Blk Time (\%) |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  | 50 |  |
| Storage Bay Dist (ft) |  | 50 |  |  | 1 | 0 |
| Storage Blk Time (\%) | 5 | 1 |  |  | 6 | 0 |

Intersection: 3: 700 E \& 11400 S

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Directions Served | L | T | T | R | L | T | T | R | L | L | T | T |
| Maximum Queue (ft) | 350 | 933 | 895 | 375 | 200 | 498 | 474 | 225 | 224 | 316 | 399 | 347 |
| Average Queue (ft) | 314 | 613 | 568 | 115 | 168 | 303 | 283 | 154 | 122 | 162 | 223 | 215 |
| 95th Queue (ft) | 426 | 1119 | 1051 | 360 | 242 | 449 | 434 | 289 | 211 | 262 | 334 | 319 |
| Link Distance (ft) |  | 1252 | 1252 |  |  | 1527 | 1527 |  |  |  | 1767 | 1767 |
| Upstream Blk Time (\%) |  | 2 | 0 |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  | 0 | 0 |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 275 |  |  | 125 | 100 |  |  | 100 | 200 | 200 |  |  |
| Storage BIk Time (\%) | 57 | 13 | 44 | 0 | 35 | 41 | 38 | 2 | 2 | 4 | 13 | 5 |
| Queuing Penalty (veh) | 303 | 35 | 62 | 0 | 151 | 78 | 81 | 8 | 5 | 13 | 34 | 11 |

Intersection: 3: 700 E \& 11400 S

| Movement | NB | SB | SB | SB | SB | SB |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Directions Served | R | L | L | T | T | R |
| Maximum Queue (ft) | 274 | 184 | 248 | 340 | 327 | 185 |
| Average Queue (ft) | 107 | 93 | 122 | 195 | 200 | 63 |
| 95th Queue (ft) | 209 | 167 | 224 | 289 | 286 | 128 |
| Link Distance (ft) |  |  |  | 887 | 887 |  |
| Upstream Blk Time (\%) |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 250 | 125 | 125 |  |  |  |
| Storage Blk Time (\%) | 0 | 6 | 10 | 25 | 3 |  |
| Queuing Penalty (veh) | 0 | 16 | 27 | 47 | 5 |  |

## Network Summary

## Network wide Queuing Penalty: 1057

| Project: <br> Analysis Period: <br> Time Period: |  | SimTraffic LOS Report <br> Sandy Orchards at Farnsworth Farms TIS <br> Mitigated Existing (2020) Background <br> Evening Peak Hour <br> Project \#: UT20-1646 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
| Intersection: Type: |  | 700 E \& 11000 S Signalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | Los |
| NB | L | 70 | 64 | 91 | 23.9 | C |
|  | T | 1,020 | 1,012 | 99 | 18.4 | B |
|  | R | 55 | 56 | 102 | 8.3 | A |
|  | Subtotal | 1,145 | 1,132 | 99 | 18.2 | B |
| SB | L | 171 | 174 | 102 | 23.1 | C |
|  | T | 723 | 718 | 99 | 8.7 | A |
|  | R | 81 | 81 | 100 | 3.5 | A |
|  | Subtotal | 975 | 973 | 100 | 10.8 | B |
| EB | L | 76 | 76 | 100 | 58.9 | E |
|  | T | 210 | 214 | 102 | 43.9 | D |
|  | R | 50 | 51 | 101 | 7.6 | A |
|  | Subtotal | 336 | 341 | 101 | 41.8 | D |
| WB | L | 75 | 70 | 93 | 82.6 | F |
|  | T | 180 | 178 | 99 | 43.9 | D |
|  | R | 111 | 115 | 103 | 14.4 | B |
|  | Subtotal | 366 | 363 | 99 | 42.0 | D |
| Total |  | 2,823 | 2,809 | 100 | 21.6 | C |

Intersection: $\quad 700$ E \& Dusty Creek Ave
Type:
Unsignalized

| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | \% | Avg | LOS |
| NB | 1 | 1,090 | 1,074 | 99 | 4.4 | A |
|  | R | 50 | 49 | 98 | 4.1 | A |
|  | Subtotal | 1,140 | 1,123 | 99 | 4.4 | A |
| SB | L | 35 | 30 | 86 | 13.3 | $B$ |
|  | T | 838 | 837 | 100 | 2.7 | A |
|  | Subtotal | 873 | 867 | 99 | 3.1 | A |
| WB | $L$ | 30 | 29 | 97 | 31.8 | D |
|  | R | 30 | 31 | 103 | 9.7 | A |
|  | Subtotal | 60 | 60 | 100 | 20.4 | C |
|  |  |  |  |  |  |  |
| Total |  | 2,073 | 2,050 | 99 | 4.3 | A |


| Project: <br> Analysis Period: Time Period: |  | SimTraffic LOS Report |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sandy Orchards at Farnsworth Farms TISMitigated Existing (2020) Background |  |  |  |  |
| Intersection: Type: |  | $700 \mathrm{E} \& 11400 \mathrm{~S}$ Signalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | LOS |
| NB | L | 255 | 258 | 101 | 107.3 | F |
|  | T | 630 | 616 | 98 | 48.5 | D |
|  | R | 230 | 223 | 97 | 21.4 | C |
|  | Subtotal | 1,115 | 1,097 | 98 | 56.8 | E |
| SB | L | 186 | 184 | 99 | 104.9 | F |
|  | T | 550 | 548 | 100 | 48.2 | D |
|  | R | 157 | 157 | 100 | 17.3 | B |
|  | Subtotal | 893 | 889 | 100 | 54.5 | D |
| EB | L | 269 | 271 | 101 | 58.2 | E |
|  | T | 1,060 | 1,048 | 99 | 41.1 | D |
|  | R | 140 | 138 | 99 | 10.5 | B |
|  | Subtotal | 1,469 | 1,457 | 99 | 41.4 | D |
| WB | L | 190 | 183 | 96 | 65.6 | E |
|  | T | 845 | 850 | 101 | 46.9 | D |
|  | R | 216 | 209 | 97 | 19.2 | B |
|  | Subtotal | 1,251 | 1,242 | 99 | 45.0 | D |
| Total |  | 4,728 | 4,685 | 99 | 48.5 | D |

## 1: 700 E \& 11000 S Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| SBR |  |  |  |  |  |  |  |  |  |  |  |
| Denied Delay (hr) | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| Denied Del/Veh (s) | 3.0 | 0.5 | 2.9 | 3.0 | 0.6 | 2.9 | 0.1 | 0.0 | 0.1 | 2.3 | 0.3 |
| Total Delay (hr) | 1.3 | 2.6 | 0.1 | 1.7 | 2.2 | 0.5 | 0.4 | 5.2 | 0.1 | 1.1 | 1.7 |
| Total Del/Veh (s) | 58.9 | 43.9 | 7.6 | 82.6 | 43.9 | 14.4 | 23.9 | 18.4 | 8.3 | 23.1 | 8.7 |
| Vehicles Entered | 76 | 212 | 51 | 70 | 177 | 115 | 64 | 1008 | 56 | 175 | 716 |
| Vehicles Exited | 76 | 214 | 51 | 70 | 178 | 115 | 64 | 1012 | 56 | 174 | 718 |
| Hourly Exit Rate | 76 | 214 | 51 | 70 | 178 | 115 | 64 | 1012 | 56 | 174 | 718 |
| Input Volume | 76 | 210 | 50 | 75 | 180 | 111 | 70 | 1020 | 55 | 171 | 723 |
| \% of Volume | 100 | 102 | 101 | 93 | 99 | 103 | 91 | 99 | 102 | 102 | 99 |

## 1: 700 E \& 11000 S Performance by movement

| Movement | All |
| :--- | ---: |
| Denied Delay (hr) | 0.5 |
| Denied Del/Veh (s) | 0.7 |
| Total Delay (hr) | 17.1 |
| Total Del/Veh (s) | 21.6 |
| Vehicles Entered | 2801 |
| Vehicles Exited | 2809 |
| Hourly Exit Rate | 2809 |
| Input Volume | 2823 |
| \% of Volume | 100 |

## 2: 700 E \& Dusty Creek Ave Performance by movement

| Movement | WBL | WBR | NBT | NBR | SBL | SBT | All |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Denied Delay (hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 0.2 | 4.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 |
| Total Delay (hr) | 0.3 | 0.1 | 1.3 | 0.1 | 0.1 | 0.6 | 2.5 |
| Total Del/Veh (s) | 31.8 | 9.7 | 4.4 | 4.1 | 13.3 | 2.7 | 4.3 |
| Vehicles Entered | 29 | 30 | 1072 | 49 | 30 | 836 | 2046 |
| Vehicles Exited | 29 | 31 | 1074 | 49 | 30 | 837 | 2050 |
| Hourly Exit Rate | 29 | 31 | 1074 | 49 | 30 | 837 | 2050 |
| Input Volume | 30 | 30 | 1090 | 50 | 35 | 838 | 2073 |
| \% of Volume | 97 | 103 | 99 | 98 | 86 | 100 | 99 |

## 3: 700 E \& 11400 S Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| SBR |  |  |  |  |  |  |  |  |  |  |  |
| Denied Delay (hr) | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 2.4 | 0.4 | 2.3 | 2.3 | 0.4 | 2.2 | 2.2 | 0.4 | 2.1 | 0.2 | 0.0 |
| Total Delay $(\mathrm{hr})$ | 4.5 | 12.1 | 0.4 | 3.4 | 11.3 | 1.1 | 7.9 | 8.6 | 1.3 | 5.4 | 7.6 |
| Total Del/Veh (s) | 58.2 | 41.1 | 10.5 | 65.6 | 46.9 | 19.2 | 107.3 | 48.5 | 21.4 | 104.9 | 48.2 |
| Vehicles Entered | 271 | 1047 | 139 | 184 | 851 | 208 | 262 | 621 | 223 | 184 | 550 |
| Vehicles Exited | 271 | 1048 | 138 | 183 | 850 | 209 | 258 | 616 | 223 | 184 | 548 |
| Hourly Exit Rate | 271 | 1048 | 138 | 183 | 850 | 209 | 258 | 616 | 223 | 184 | 548 |
| Input Volume | 269 | 1060 | 140 | 190 | 845 | 216 | 255 | 630 | 230 | 186 | 550 |
| \% of Volume | 101 | 99 | 99 | 96 | 101 | 97 | 101 | 98 | 97 | 99 | 100 |

## 3: 700 E \& 11400 S Performance by movement

| Movement | All |
| :--- | ---: |
| Denied Delay (hr) | 1.1 |
| Denied Del/Veh (s) | 0.8 |
| Total Delay (hr) | 64.5 |
| Total Del/Veh (s) | 48.5 |
| Vehicles Entered | 4696 |
| Vehicles Exited | 4685 |
| Hourly Exit Rate | 4685 |
| Input Volume | 4728 |
| \% of Volume | 99 |

Total Network Performance

|  |  |
| :--- | ---: |
| Denied Delay (hr) | 1.7 |
| Denied Del/Veh (s) | 1.1 |
| Total Delay (hr) | 90.1 |
| Total Del/Veh (s) | 55.7 |
| Vehicles Entered | 5637 |
| Vehicles Exited | 5634 |
| Hourly Exit Rate | 5634 |
| Input Volume | 15297 |
| \% of Volume | 37 |

Intersection: 1: 700 E \& 11000 S

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
| Directions Served | L | T | R | L | T | R | L | T | T | R | L | T |
| Maximum Queue (ft) | 171 | 266 | 152 | 158 | 272 | 174 | 189 | 360 | 369 | 215 | 155 | 166 |
| Average Queue (ft) | 64 | 140 | 27 | 68 | 121 | 50 | 40 | 163 | 179 | 24 | 70 | 82 |
| 95th Queue (ft) | 136 | 231 | 95 | 138 | 232 | 124 | 115 | 326 | 339 | 126 | 124 | 147 |
| Link Distance (ft) |  | 1546 |  |  | 1422 |  |  | 1600 | 1600 |  | 1702 |  |
| Upstream Blk Time (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 100 |  | 125 | 125 |  | 100 | 100 |  |  | 225 | 100 |  |
| Storage Blk Time (\%) | 4 | 21 |  | 4 | 14 | 0 | 1 | 14 | 5 |  | 4 | 3 |
| Queuing Penalty (veh) | 9 | 27 |  | 13 | 26 | 1 | 3 | 10 | 3 | 13 | 5 |  |

Intersection: 1: 700 E \& 11000 S

| Movement | SB | SB |
| :--- | ---: | ---: |
| Directions Served | T | R |
| Maximum Queue (ft) | 157 | 47 |
| Average Queue (ft) | 66 | 12 |
| 95th Queue (ft) | 133 | 35 |
| Link Distance (ft) | 1702 |  |
| Upstream Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  |  |
| Storage Bay Dist (ft) |  |  |
| Storage Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  |  |

Intersection: 2: 700 E \& Dusty Creek Ave

| Movement | WB | WB | NB | NB | SB |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Directions Served | L | R | T | TR | L |
| Maximum Queue (ft) | 65 | 72 | 9 | 13 | 60 |
| Average Queue (ft) | 24 | 23 | 0 | 1 | 16 |
| 95th Queue (ft) | 57 | 56 | 7 | 7 | 47 |
| Link Distance (ft) | 691 |  | 887 | 887 |  |
| Upstream Blk Time (\%) |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  | 50 |
| Storage Bay Dist (ft) |  | 50 |  | 1 |  |
| Storage Blk Time (\%) | 5 | 1 |  |  | 5 |

Intersection: 3: 700 E \& 11400 S

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Directions Served | L | T | T | R | L | T | T | R | L | L | T | T |
| Maximum Queue (ft) | 350 | 533 | 510 | 374 | 200 | 538 | 512 | 225 | 234 | 317 | 480 | 460 |
| Average Queue (ft) | 224 | 327 | 307 | 62 | 165 | 328 | 314 | 148 | 135 | 174 | 250 | 240 |
| 95th Queue (ft) | 378 | 480 | 449 | 227 | 246 | 481 | 468 | 289 | 231 | 293 | 451 | 419 |
| Link Distance (ft) |  | 1252 | 1252 |  |  | 1527 | 1527 |  |  |  | 1767 | 1767 |
| Upstream Blk Time (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 275 |  |  | 125 | 100 |  |  | 100 | 200 | 200 |  |  |
| Storage Blk Time (\%) | 4 | 14 | 36 | 0 | 26 | 45 | 41 | 2 | 7 | 10 | 13 | 5 |
| Queuing Penalty (veh) | 22 | 38 | 50 | 0 | 108 | 86 | 89 | 8 | 23 | 33 | 33 | 12 |

Intersection: 3: 700 E \& 11400 S

| Movement | NB | SB | SB | SB | SB | SB |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Directions Served | R | L | L | T | T | R |
| Maximum Queue (ft) | 281 | 178 | 250 | 352 | 350 | 210 |
| Average Queue (ft) | 95 | 98 | 132 | 196 | 203 | 66 |
| 95th Queue (ft) | 192 | 170 | 234 | 310 | 305 | 142 |
| Link Distance (ft) |  |  |  | 887 | 887 |  |
| Upstream Blk Time (\%) |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 250 | 125 | 125 |  |  | 250 |
| Storage Blk Time (\%) | 0 | 9 | 14 | 25 | 4 |  |
| Queuing Penalty (veh) | 0 | 25 | 39 | 47 | 6 |  |

## Network Summary

Network wide Queuing Penalty: 736

| Project: <br> Analysis Period: <br> Time Period: |  | SimTraffic LOS Report |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Sandy Orchards at Farnsworth Farms TIS Existing (2020) Plus Project |  |  |  |  |
| Intersection: <br> Type: |  | 700 E \& 11000 S Signalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | LOS |
| NB | L | 72 | 72 | 100 | 26.9 | C |
|  | T | 1,025 | 1,054 | 103 | 17.6 | B |
|  | R | 56 | 55 | 99 | 6.5 | A |
|  | Subtotal | 1,153 | 1,181 | 102 | 17.7 | B |
| SB | L | 171 | 172 | 101 | 24.5 | C |
|  | T | 732 | 728 | 99 | 9.0 | A |
|  | R | 81 | 81 | 100 | 3.4 | A |
|  | Subtotal | 984 | 981 | 100 | 11.3 | B |
| EB | L | 76 | 77 | 101 | 64.6 | E |
|  | T | 210 | 210 | 100 | 43.7 | D |
|  | R | 54 | 56 | 104 | 8.1 | A |
|  | Subtotal | 340 | 343 | 101 | 42.6 | D |
| WB | L | 77 | 79 | 102 | 75.2 | E |
|  | T | 180 | 170 | 94 | 41.4 | D |
|  | R | 111 | 110 | 99 | 14.8 | B |
|  | Subtotal | 368 | 359 | 98 | 40.7 | D |
| Total |  | 2,874 | 2,890 | 101 | 21.4 | C |

Intersection: $\quad 700$ E \& Dusty Creek Ave
Type:
Unsignalized

| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | \% | Avg | LOS |
| NB | T | 1,126 | 1,148 | 102 | 4.6 | A |
|  | R | 50 | 55 | 109 | 4.4 | A |
|  | Subtotal | 1,176 | 1,203 | 102 | 4.6 | A |
| SB | L | 35 | 34 | 97 | 12.8 | $B$ |
|  | T | 864 | 862 | 100 | 0.3 | A |
|  | Subtotal | 899 | 896 | 100 | 0.8 | A |
| WB | $L$ | 30 | 30 | 100 | 29.7 | D |
|  | R | 30 | 36 | 120 | 8.6 | A |
|  | Subtotal | 60 | 66 | 110 | 18.2 | C |
|  |  |  |  |  |  |  |
| Total |  | 2,135 | 2,165 | 101 | 3.4 | A |


| SimTraffic LOS Report |  |
| :--- | :--- |
|  | Sandy Orchards at Farnsworth Farms TIS <br> Project: <br> Analysis Period: <br> Time Period: |


| Intersection: | 700 E \& 11400 S |
| :--- | :--- |
| Type: | Signalized |


| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | \% | Avg | LOS |
| NB | L | 255 | 257 | 101 | 102.9 | $F$ |
|  | T | 641 | 654 | 102 | 47.7 | D |
|  | R | 230 | 224 | 97 | 23.8 | C |
|  | Subtotal | 1,126 | 1,135 | 101 | 55.5 | E |
| SB | L | 187 | 187 | 100 | 112.0 | $F$ |
|  | T | 557 | 558 | 100 | 47.8 | D |
|  | R | 166 | 175 | 106 | 18.1 | $B$ |
|  | Subtotal | 910 | 920 | 101 | 55.2 | E |
| EB | L | 284 | 299 | 105 | 66.4 | E |
|  | T | 1,060 | 1,067 | 101 | 43.7 | D |
|  | R | 140 | 144 | 103 | 11.1 | B |
|  | Subtotal | 1,484 | 1,510 | 102 | 45.1 | D |
| WB | L | 190 | 188 | 99 | 70.5 | E |
|  | T | 845 | 851 | 101 | 48.6 | D |
|  | R | 218 | 220 | 101 | 21.0 | C |
|  | Subtotal | 1,253 | 1,259 | 100 | 47.0 | D |
| Total |  | 4,781 | 4,831 | 101 | 50.1 | $D$ |

Intersection:
Type:

| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Avg | \% | Avg | LOS |
| NB | T | 1,156 | 1,183 | 102 | 0.8 | A |
|  | Subtotal | 1,156 | 1,183 | 102 | 0.8 | A |
| SB | T | 895 | 899 | 100 | 2.1 | A |
|  | R | 22 | 19 | 87 | 1.5 | A |
|  | Subtotal | 917 | 918 | 100 | 2.1 | A |
| $E B$ | $\boldsymbol{R}$ | 12 | 8 | 65 | 4.6 | A |
|  | Subtotal | 12 | 8 | 67 | 4.6 | A |
|  |  |  |  |  |  |  |
| Total |  | 2,085 | 2,109 | 101 | 1.4 | A |


| SimTraffic LOS Report |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Project: <br> Analysis Period: Time Period: |  | Sandy Orchards at Farn Existing (2020) Plus Project Evening Peak Hour |  |  | Proje | 20-16 |
| Intersection: Type: |  | 700 E \& South Access Unsignalized |  |  |  |  |
| Approach | Movement | Demand Volume | Volume Served |  | Delay/Veh (sec) |  |
|  |  |  | Avg | \% | Avg | LOS |
|  | T | 1,156 | 1,184 | 102 | 0.4 | A |
|  | Subtotal | 1,156 | 1,184 | 102 | 0.4 | A |
|  | T | 886 | 883 | 100 | 0.9 | A |
| SB | R | 21 | 22 | 106 | 0.5 | A |
|  | Subtotal | 907 | 905 | 100 | 0.9 | A |
|  | $R$ | 13 | 12 | 91 | 5.2 | A |
|  | Subtotal | 13 | 12 | 92 | 5.2 | A |
| Total |  | 2,076 | 2,101 | 101 | 0.6 | A |

1: 700 E \& 11000 S Performance by movement

|  | EBL | EBT | EBR | WBL | WBT | WBR | NBU | NBL | NBT | NBR | SBL |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Movement | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Denied Delay (hr) | 2.9 | 0.5 | 2.8 | 2.9 | 0.6 | 3.0 | 0.1 | 0.1 | 0.0 | 0.1 | 2.3 |
| Denied Del/Veh (s) | 1.4 | 2.6 | 0.1 | 1.7 | 2.0 | 0.5 | 0.2 | 0.5 | 5.2 | 0.1 | 1.2 |
| Total Delay (hr) | 64.6 | 43.7 | 8.1 | 75.2 | 41.4 | 14.8 | 22.3 | 26.9 | 17.6 | 6.5 | 24.5 |
| Total Del/Veh (s) | 77 | 210 | 56 | 78 | 170 | 110 | 26 | 72 | 1053 | 55 | 172 |
| Vehicles Entered | 77 | 210 | 56 | 79 | 170 | 110 | 26 | 72 | 1054 | 55 | 172 |
| Vehicles Exited | 77 | 210 | 56 | 79 | 170 | 110 | 26 | 72 | 1054 | 55 | 172 |
| Hourly Exit Rate | 76 | 210 | 54 | 77 | 180 | 111 | 28 | 72 | 1025 | 56 | 172 |
| Input Volume | 101 | 100 | 104 | 102 | 94 | 99 | 94 | 100 | 103 | 99 | 101 |
| \% of Volume |  |  |  |  |  |  |  |  |  | 932 |  |

## 1: 700 E \& 11000 S Performance by movement

| Movement | SBR | All |
| :--- | ---: | ---: |
| Denied Delay (hr) | 0.1 | 0.5 |
| Denied Del/Veh (s) | 2.3 | 0.7 |
| Total Delay (hr) | 0.1 | 17.3 |
| Total Del/Veh (s) | 3.4 | 21.4 |
| Vehicles Entered | 81 | 2886 |
| Vehicles Exited | 81 | 2890 |
| Hourly Exit Rate | 81 | 2890 |
| Input Volume | 81 | 2874 |
| \% of Volume | 100 | 101 |

## 2: 700 E \& Dusty Creek Ave Performance by movement

| Movement | WBL | WBR | NBT | NBR | SBL | SBT | All |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Denied Delay (hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 0.2 | 4.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| Total Delay (hr) | 0.2 | 0.1 | 1.5 | 0.1 | 0.1 | 0.1 | 2.1 |
| Total Del/Veh (s) | 29.7 | 8.6 | 4.6 | 4.4 | 12.8 | 0.3 | 3.4 |
| Vehicles Entered | 30 | 36 | 1149 | 55 | 33 | 862 | 2165 |
| Vehicles Exited | 30 | 36 | 1148 | 55 | 34 | 862 | 2165 |
| Hourly Exit Rate | 30 | 36 | 1148 | 55 | 34 | 862 | 2165 |
| Input Volume | 30 | 30 | 1126 | 50 | 35 | 864 | 2135 |
| \% of Volume | 100 | 120 | 102 | 109 | 97 | 100 | 101 |

3: 700 E \& 11400 S Performance by movement

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBU | SBL |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| SBT |  |  |  |  |  |  |  |  |  |  |  |
| Denied Delay (hr) | 0.2 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 2.3 | 0.5 | 2.3 | 2.2 | 0.4 | 2.2 | 2.2 | 0.4 | 2.1 | 0.0 | 0.1 |
| Total Delay $(\mathrm{hr})$ | 5.7 | 13.1 | 0.4 | 3.8 | 11.7 | 1.3 | 7.5 | 8.9 | 1.5 | 0.2 | 5.9 |
| Total Del/Veh (s) | 66.4 | 43.7 | 11.1 | 70.5 | 48.6 | 21.0 | 102.9 | 47.7 | 23.8 | 90.1 | 112.0 |
| Vehicles Entered | 299 | 1068 | 144 | 188 | 852 | 220 | 258 | 651 | 224 | 7 | 186 |
| Vehicles Exited | 299 | 1067 | 144 | 188 | 851 | 220 | 257 | 654 | 224 | 7 | 187 |
| Hourly Exit Rate | 299 | 1067 | 144 | 188 | 851 | 220 | 257 | 654 | 224 | 7 | 187 |
| Input Volume | 284 | 1060 | 140 | 190 | 845 | 218 | 255 | 641 | 230 | 8 | 187 |
| \% of Volume | 105 | 101 | 103 | 99 | 101 | 101 | 101 | 102 | 97 | 85 | 100 |

## 3: 700 E \& 11400 S Performance by movement

| Movement | SBR | All |
| :--- | ---: | ---: |
| Denied Delay (hr) | 0.0 | 1.1 |
| Denied Del/Veh (s) | 0.1 | 0.8 |
| Total Delay (hr) | 0.9 | 68.4 |
| Total Del/Veh (s) | 18.1 | 50.1 |
| Vehicles Entered | 174 | 4823 |
| Vehicles Exited | 175 | 4831 |
| Hourly Exit Rate | 175 | 4831 |
| Input Volume | 166 | 4781 |
| \% of Volume | 106 | 101 |

## 4: 700 E \& North Access Performance by movement

| Movement | EBR | NBT | SBT | SBR | All |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Denied Delay (hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (hr) | 0.0 | 0.3 | 0.5 | 0.0 | 0.8 |
| Total Del/Veh (s) | 4.6 | 0.8 | 2.1 | 1.5 | 1.4 |
| Vehicles Entered | 8 | 1183 | 897 | 19 | 2107 |
| Vehicles Exited | 8 | 1183 | 899 | 19 | 2109 |
| Hourly Exit Rate | 8 | 1183 | 899 | 19 | 2109 |
| Input Volume | 12 | 1156 | 895 | 22 | 2085 |
| \% of Volume | 65 | 102 | 100 | 87 | 101 |

5: 700 E \& South Access Performance by movement

| Movement | EBR | NBT | SBT | SBR | All |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Denied Delay (hr) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denied Del/Veh (s) | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay (hr) | 0.0 | 0.1 | 0.2 | 0.0 | 0.4 |
| Total Del/Veh (s) | 5.2 | 0.4 | 0.9 | 0.5 | 0.6 |
| Vehicles Entered | 12 | 1184 | 884 | 22 | 2102 |
| Vehicles Exited | 12 | 1184 | 883 | 22 | 2101 |
| Hourly Exit Rate | 12 | 1184 | 883 | 22 | 2101 |
| Input Volume | 13 | 1156 | 886 | 21 | 2076 |
| \% of Volume | 91 | 102 | 100 | 106 | 101 |

## Total Network Performance

|  |  |
| :--- | ---: |
| Denied Delay (hr) | 1.7 |
| Denied Del/Veh (s) | 1.1 |
| Total Delay (hr) | 95.4 |
| Total Del/Veh (s) | 57.6 |
| Vehicles Entered | 5774 |
| Vehicles Exited | 5782 |
| Hourly Exit Rate | 5782 |
| Input Volume | 19690 |
| \% of Volume | 29 |

Intersection: 1: 700 E \& 11000 S

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Directions Served | L | T | R | L | T | R | UL | T | T | R | L | T |
| Maximum Queue (ft) | 176 | 269 | 187 | 164 | 250 | 174 | 274 | 344 | 354 | 130 | 173 | 189 |
| Average Queue (ft) | 66 | 136 | 31 | 73 | 111 | 50 | 61 | 170 | 185 | 15 | 69 | 84 |
| 95th Queue (ft) | 134 | 227 | 109 | 140 | 198 | 124 | 151 | 333 | 344 | 80 | 131 | 150 |
| Link Distance (ft) |  | 1546 |  |  | 1423 |  |  | 718 | 718 |  |  | 1702 |
| Upstream BIk Time (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 100 |  | 125 | 125 |  | 100 | 100 |  |  | 225 | 100 |  |
| Storage Blk Time (\%) | 5 | 21 | 0 | 3 | 12 | 1 | 1 | 14 | 5 |  | 4 | 3 |
| Queuing Penalty (veh) | 14 | 27 | 0 | 10 | 23 | 2 | 7 | 14 | 3 |  | 16 | 5 |

Intersection: 1: 700 E \& 11000 S

| Movement | SB | SB |
| :--- | ---: | ---: |
| Directions Served | T | R |
| Maximum Queue (ft) | 154 | 46 |
| Average Queue (ft) | 72 | 11 |
| 95th Queue (ft) | 134 | 32 |
| Link Distance (ft) | 1702 |  |
| Upstream Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  | 225 |
| Storage Bay Dist (ft) |  |  |
| Storage Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  |  |

Intersection: 2: 700 E \& Dusty Creek Ave

| Movement | WB | WB | NB | SB |
| :--- | ---: | ---: | ---: | ---: |
| Directions Served | L | R | TR | L |
| Maximum Queue (ft) | 72 | 66 | 16 | 56 |
| Average Queue (ft) | 25 | 26 | 1 | 19 |
| 95th Queue (ft) | 58 | 56 | 8 | 49 |
| Link Distance (ft) | 692 |  | 901 |  |
| Upstream Blk Time (\%) |  |  |  |  |
| Queuing Penalty (veh) |  |  |  | 75 |
| Storage Bay Dist (ft) |  | 50 |  | 0 |
| Storage Blk Time (\%) | 4 | 1 |  | 1 |

Intersection: 3: 700 E \& 11400 S

| Movement | EB | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Directions Served | L | T | T | R | L | T | T | R | L | L | T | T |
| Maximum Queue (ft) | 350 | 597 | 569 | 375 | 200 | 540 | 547 | 225 | 237 | 324 | 405 | 368 |
| Average Queue (ft) | 251 | 355 | 332 | 83 | 164 | 337 | 323 | 149 | 137 | 174 | 242 | 225 |
| 95th Queue (ft) | 398 | 537 | 501 | 288 | 242 | 499 | 487 | 288 | 235 | 289 | 358 | 323 |
| Link Distance (ft) |  | 1252 | 1252 |  |  | 1527 | 1527 |  |  |  | 1767 | 1767 |
| Upstream Blk Time (\%) |  |  |  |  |  |  |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 275 |  |  | 125 | 100 |  |  | 100 | 200 | 200 |  |  |
| Storage BIk Time (\%) | 7 | 15 | 37 | 0 | 30 | 45 | 42 | 3 | 6 | 10 | 16 | 5 |
| Queuing Penalty (veh) | 40 | 44 | 52 | 0 | 128 | 86 | 91 | 14 | 20 | 32 | 40 | 13 |

Intersection: 3: 700 E \& 11400 S

| Movement | NB | SB | SB | SB | SB | SB |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Directions Served | R | UL | L | T | T | R |
| Maximum Queue (ft) | 235 | 182 | 247 | 352 | 341 | 232 |
| Average Queue (ft) | 100 | 105 | 138 | 202 | 205 | 78 |
| 95th Queue (ft) | 185 | 177 | 240 | 303 | 291 | 161 |
| Link Distance (ft) |  |  |  | 901 | 901 |  |
| Upstream Blk Time (\%) |  |  |  |  |  |  |
| Queuing Penalty (veh) |  |  |  |  |  |  |
| Storage Bay Dist (ft) | 250 | 125 | 125 |  |  | 250 |
| Storage Blk Time (\%) | 0 | 12 | 17 | 25 | 3 |  |
| Queuing Penalty (veh) | 0 | 34 | 47 | 50 | 5 |  |

Intersection: 4: 700 E \& North Access

| Movement | EB |
| :--- | ---: |
| Directions Served | R |
| Maximum Queue (ft) | 33 |
| Average Queue (ft) | 7 |
| 95th Queue (ft) | 29 |
| Link Distance (ft) | 309 |
| Upstream Blk Time (\%) |  |
| Queuing Penalty (veh) |  |
| Storage Bay Dist (ft) |  |
| Storage Blk Time (\%) |  |
| Queuing Penalty (veh) |  |

Intersection: 5: 700 E \& South Access

| Movement | EB | SB |
| :--- | ---: | ---: |
| Directions Served | R | T |
| Maximum Queue (ft) | 33 | 6 |
| Average Queue (ft) | 10 | 0 |
| 95th Queue (ft) | 34 | 6 |
| Link Distance (ft) | 347 | 596 |
| Upstream Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  |  |
| Storage Bay Dist (ft) |  |  |
| Storage Blk Time (\%) |  |  |
| Queuing Penalty (veh) |  |  |
| Network Summary |  |  |
| Network wide Queuing Penalty: 819 |  |  |

# APPENDIX C Site Plan 



SimTraffic Queueing Report
Project: Sandy Orchards at Farnsworth Farms TIS
Analysis: Existing (2020) Background
Time Period: Evening Peak Hour
$95^{\text {mi }}$ Percentile Queue Length (feet)

HALES $\dagger$ ENGINEERING
innovative transportation solutions

| Intersection | NB |  |  |  | SB |  |  | EB |  |  | WB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | L | R | T | TR | L | R | T | L | R | T | L | R | T |
| 1:700 E \& 11000 S | 111 | 71 | 287 | -- | 214 | 37 | 320 | 112 | 70 | 208 | 125 | 121 | 216 |
| 2: 700 E \& Dusty Creek Ave | -- | -- | 6 | 7 | 49 | -- | 20 | -- | -- | -- | 60 | 53 | -- |
| 3: 700 E \& 11400 S | 237 | 209 | 327 | -- | 196 | 128 | 288 | 426 | 360 | 1,085 | 242 | 289 | 442 |

## SimTraffic Queueing Report

Project: Sandy Orchards at Farnsworth Farms TIS
Analysis: Mitigated Existing (2020) Background
Time Period: Evening Peak Hour
$95^{\text {th }}$ Percentile Queue Length (feet)

## HALES@ENGINEERING

innovative transportation solutions

Project \#: UT20-1646

| Intersection | NB |  |  |  | SB |  |  | EB |  |  | WB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | L | R | T | TR | L | R | T | L | R | T | L | R | T |
| 1:700 E \& 11000 S | 115 | 126 | 333 | -- | 124 | 35 | 140 | 136 | 95 | 231 | 138 | 124 | 232 |
| 2: 700 E \& Dusty Creek Ave | -- | -- | 7 | 7 | 47 | -- | -- | -- | -- | -- | 57 | 56 | -- |
| 3: 700 E \& 11400 S | 262 | 192 | 435 | -- | 202 | 142 | 308 | 378 | 227 | 465 | 246 | 289 | 475 |

## SimTraffic Queueing Report

Project: Sandy Orchards at Farnsworth Farms TIS Analysis: Existing (2020) Plus Project
Time Period: Evening Peak Hour
$95^{\text {m }}$ Percentile Queue Length (feet)

## HALES@ENGINEERING

innovative transportation solutions

| Intersection | NB |  |  |  |  | SB |  |  |  | EB |  |  | WB |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | L | R | T | TR | UL | L | R | T | UL | L | R | T | L | R | T |
| 1:700 E \& 11000 S | -- | 80 | 339 | -- | 151 | 131 | 32 | 142 | -- | 134 | 109 | 227 | 140 | 124 | 198 |
| 2: 700 E \& Dusty Creek Ave | -- | -- | -- | 8 | -- | 49 | -- | -- | -- | -- | -- | -- | 58 | 56 | -- |
| 3: 700 E \& 11400 S | 262 | 185 | 341 | -- | -- | 240 | 161 | 297 | 177 | 398 | 288 | 519 | 242 | 288 | 493 |
| 4:700 E \& North Access | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 29 | -- | -- | -- | -- |
| 5:700 E \& South Access | -- | -- | -- | -- | -- | -- | -- | 6 | -- | -- | 34 | -- | -- | -- | -- |


[^0]:    1. Land Use Code from the Institute of Transportation Engineers (ITE) Inip Cieneation. 10th Edition. 2017.

    SOURCE: Hales Engineering, June 2020

